



(1) **EC-Type Examination Certificate**

(2) Equipment or Protective Systems intended for use in potentially hazardous atmospheres - **Directive 94/9/EC**



(3) **TÜV 99 ATEX 1388 X**

(4) Equipment: Mass Flowmeter Primary Type MC16..

(5) Manufacturer: Bailey-Fischer & Porter GmbH

(6) Address: Dransfelder Straße 2  
D-37079 Göttingen, Germany

(7) The equipment and any acceptable variations thereto are specified in the schedule to this certificate and documents therein referred to.

(8) The TÜV Hannover/Sachsen Anhalt e.V., TÜV Certification Body No. 0032 in accordance with the Article 9 of the European Community Council Directive 94/9/EC of 23 March 1994 certifies that this equipment or protective system has been found to comply with the Essential Safety and Health Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II of the Directive.

The examination and test results are recorded in the confidential report No. 98/PX19580.

(9) Compliance with the Essential Health and Safety Requirements has been assured by the compliance with

**EN 50 014: 1997**

**EN 50 019:1994**

**EN 50 020:1994**

**EN 50 028:1987**

**EN 50 284: 1997, Par. 4.2.5**

(10) If the sign "X" is placed after the certification number, it indicates that the equipment or protective system is subject to the special conditions for safe use specified in the schedule to this certificate.

(11) This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The markings for the equipment shall include the following:

 **II 1/2 G or II 2 G EEx em [ib] IIC T6**

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Certification Authority  
Am TÜV 1  
D-30519 Hannover, Germany

Hannover, 20.01.1998

Stürwold

Head of the Certification Body

(13)

**SCHEDULE**(14) **EC-Type Examination Certificate No. TÜV 99 ATEX 1388 X**

(15) Description of the Equipment

The Mass Flowmeter Primary Type MC16.. is utilized to meter the flowrate of liquids or gases and its operation is based on the Coriolis-Principle. The Mass Flowmeter Primaries Type MC 16.. may only be installed in explosion hazardous areas defined as Category 2 (Zone 1). The internal volume of the Mass Flowmeter Primary Type MC16.. corresponds to Category 1 (Zone 0) for meter sizes 2", 2-1/2", 3" and 4" [DN50, DN65, DN 80 and DN 100]. The internal volume of the Mass Flowmeter Primary Type MC16.. corresponds only to Category 2 (Zone 1) for the meter size 1-1/2" [DN40].

The highest allowable fluid temperature values are listed in the following table as a function of the Temperature Class and the ambient temperature:

Temperature Class	Highest Allowable Ambient Temperature		
	40°C	50°C	60°C
T2	180°C	--	--
T3	165°C	160°C	110°C
T4	100°C	100°C	100°C
T5	65°C	65°C	65°C
T6	50°C	50°C	50°C

The values also apply to insulated Mass Flowmeter Primary installations.

The allowable operating pressure may be found in the Instruction Bulletin of the manufacturer.

**Electrical Specifications**

Excitation coil circuit..... Non-Intrinsically Safe circuit  
(Connection terminals M6, M7) Max. voltage:  $U_m = 60\text{ V}$   
Nominal current max. 130 mA

Pt 100 circuit..... Non-Intrinsically Safe circuit  
(Connection terminals UT+, UT-, IT+, IT-) Max. voltage:  $U_m = 60\text{ V}$

Signal circuit ..... Non-Intrinsically Safe circuit  
(Connection terminals S1 ... S6) Max. voltage:  $U_m = 60\text{ V}$

Ground connection for the  
cable shield ..... Capacitively connected the Potential Equalization  
(Connection terminal SE)

All voltage value specified as  $U_m = 60\text{ V}$  are the maximum safe voltages which may be applied to the connection terminals without impacting the explosion protection capability of the flowmeter.

(16) The test documentation which consists of 9 pages including 8 drawings is listed in the Examination Report.

(17) Special Conditions

1.

All external ground connection terminals are to be connected to the potential equalization in the explosion hazardous area. The presently valid installation regulations are to be observed.

2.

The corrosion resistance to the meter tube materials relative to the metered fluid must be considered.

(18) Standard Safety and Health requirements

None additionally

**1<sup>st</sup> SUPPLEMENT**  
to  
**EC-Type Examination Certificate No. TÜV 99 ATEX 1388 X**

Issued to the Company: Bailey-Fischer & Porter GmbH  
Dransfelder Straße 2  
D-37079 Göttingen, [Germany]

The Mass Flowmeter Type MC16.. meter size range was expanded by the addition of a number of new sizes. The Model Type 10MI2.. was added to the product palette. These Mass Flowmeters may now manufactured in accordance with the Examination Documentation listed below.

The designation for the Mass Flowmeter Type MC16.. in meter sizes DN 10 to DN 40 [ $\frac{3}{8}$ " to  $1\frac{1}{2}$ "] and Type 10MI2.. is:

**II 2 G EEx em [ib] IIC T2 .. T6**

The designation for the Mass Flowmeter Primary Type MC16.. in meter sizes DN 50 to DN 150 [2" to 6"] is:

**II 1/2 G EEx em [ib] IIC T2 .. T6**

The maximum allowable temperature in relationship to the ambient temperature, the Temperature Class and the flowmeter size is listed in the following table:

Model	Meter Size	Temperature Class	Maximum Ambient Temperature				
			40°C	50°C	60°C		
MC16	DN 10 / $\frac{3}{8}$ '' DN 15 / $\frac{1}{2}$ ''	T2	150°C	150°C	-		
		T3	140°C	140°C	110°C		
		T4	75°C	75°C	75°C		
		T5	40°C	40°C	40°C		
		T6	25°C	25°C	25°C		
	DN 20 / $\frac{3}{4}$ '' DN 25 / 1 '' DN 40 / $1\frac{1}{2}$ '' DN 50 / 2 '' DN 65 / $2\frac{1}{2}$ '' DN 80 / 3 '' DN 100 / 4 '' DN 150 / 6 ''	T2	180°C	-	-		
		T3	165°C	160°C	110°C		
		T4	100°C	100°C	100°C		
		T5	65°C	65°C	65°C		
		T6	50°C	50°C	50°C		
		10MI2	DN 3 / $\frac{1}{8}$ ''	T2	150°C	150°C	-
				T3	140°C	140°C	110°C
				T4	75°C	75°C	75°C
				T5	40°C	40°C	40°C
T6	25°C			25°C	25°C		
DN 6 / $\frac{1}{4}$ '' DN 15 / $\frac{1}{2}$ '' DN 25 / 1 '' DN 40 / $1\frac{1}{2}$ ''	T2	180°C	-	-			
	T3	165°C	160°C	110°C			
	T4	100°C	100°C	100°C			
	T5	65°C	65°C	65°C			
	T6	50°C	50°C	50°C			

# 1<sup>st</sup> Supplement to EC-Type Examination Certificate No. TÜV 99 ATEX 1388 X

The temperatures for Model MC16 also apply to insulated flowmeter primaries while those for Models 10MI2 apply to non-insulated flowmeter primaries.

The electrical specifications and the special requirements are applicable without change for this Supplement.

## Examination Documentation

Signed on 12 May 1999

1. Description (6 pages)
2. Drawing Nos.: MDM-10-A0166  
MDM-10-A0169  
MDM-10-A0175  
MDM-10-A0176  
MDM-10-A0178  
MDM-10-A0179

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Certification Authority  
Am TÜV 1  
D-30519 Hannover, [Germany]

Hannover, 31 May 1999

i.V. Richter

**Head of the Certification Body**

Translated from the German Original

**2<sup>nd</sup> SUPPLEMENT**  
**to**  
**EC-Type Examination Certificate No. TÜV 99 ATEX 1388 X**

Issued to: Bailey-Fischer & Porter GmbH  
Dransfelder Straße 2  
D-37079 Göttingen, [Germany]

The Mass Flowmeter Type MC16 was expanded by the addition of the DN 6 / ¼" size. This Mass Flowmeter may now be manufactured in accordance with the Examination Documentation listed below.

The designation for the Mass Flowmeter Type MC16 size DN 6 / ¼" is:

**II 2 G EEx em [ib] IIC T2 .. T6**

The maximum allowable temperatures in relationship to the ambient temperature, the Temperature Class for the above named flowmeter size are listed in the following table:

Model	Meter Size	Temperature Class	Maximum Ambient Temperature		
			40°C	50°C	60°C
MC16	DN 6 / ¼"	T2	150°C	150°C	-
		T3	140°C	140°C	110°C
		T4	75°C	75°C	75°C
		T5	40°C	40°C	40°C
		T6	25°C	25°C	25°C

The electrical specifications and the special requirements are applicable without change for this Supplement.

Examination Documentation

Signed on 16 June 1999

1. Description (2 pages)

TÜV Hannover/Sachsen-Anhalt e.V.  
TÜV CERT-Certification Authority  
Am TÜV 1  
D-30519 Hannover, [Germany]

Hannover, 16 June 1999

Stürwold

**Head of the Certification Body**